

What is claimed is:

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SUB A2

1. An apparatus for presenting, and monitoring telecommunication transaction records via a thin web client interface, the apparatus comprising: a billing server, configured to maintain the telecommunication transaction records, and to query the telecommunication transaction records in response to a request for prescribed data; and a web server, coupled to said billing server, configured to send telecommunication transaction information to said billing server, to request said prescribed data in response to a user command via the thin web client interface, and to provide said prescribed data to the user; wherein said prescribed data distinguishes between a first telecommunication transaction record and a second telecommunication transaction record.

2. The apparatus as recited in claim 1, wherein each of the telecommunication transaction records documents a specific telecommunication event.

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3. The apparatus as recited in claim 2, wherein, upon execution of said specific telecommunication event,

3 said web server sends said telecommunication
 4 transaction information to said billing server and said
 5 billing server generates a specific telecommunication
 6 transaction record.

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 1 4. The apparatus as recited in claim 3, wherein said
 2 specific telecommunication event comprises a local toll
 3 call, a long distance call, or a calling card call.

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 1 5. The apparatus as recited in claim 4, wherein said
 2 telecommunication transaction information comprises an
 3 account number, a calling number, a transaction date, a
 4 transaction time, a called number, a called place, a
 5 transaction duration, and a transaction cost.

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 1 6. The apparatus as recited in claim 1, wherein the thin
 2 web client interface is a web browser capable of
 3 processing HTML-compatible web pages.

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 1 7. The apparatus as recited in claim 6, wherein said web
 2 server is a computer that transmits and receives data
 3 packets over a data network to provide
 4 telecommunication services for said user.

1 8. The apparatus as recited in claim 7, wherein said web
2 server transmits HTML-compatible web pages over said
3 data network to allow said user to view said prescribed
4 data using the thin web client interface.

1 10. The apparatus as recited in claim 9, wherein said web
2 server employs TCP/IP protocol to transmit and receive
3 said data packets.

11. The apparatus as recited in claim 10, wherein said
billing server maintains said telecommunication
transaction records in a data base.

1 12. The apparatus as recited in claim 11, wherein said data
2 base is accessed by an Open Data Base Connectivity
3 (ODBC)-compatible query.

1 13. The apparatus as recited in claim 12, wherein said user
2 specifies said prescribed data by requesting a query of
3 said data base for selected transaction records that
4 match parameters of said query, said parameters

5 including a calling line field, a number called field,
6 a called place field, and a transaction cost field,
7 wherein said fields are entered by said user and
8 transmitted to said web server via the thin web client
9 interface.

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14. An interactive telecommunications billing mechanism,
comprising:
a billing server, for maintaining a transaction data
base, and for querying said transaction data base
to retrieve selected transaction records that
match parameters of a query, wherein each of said
selected transaction records comprises:
a line field, documenting a first telephone number
from which a call originates;
a number field, documenting a second telephone
number to which said call is placed;
a place field, documenting a location
corresponding to said number field; and
a cost field, documenting a cost of a
corresponding call event; and
a web server, coupled to said billing server, for
providing said query in response to a user command
received from a data network, and for transmitting
said selected transaction records to a user over
said data network for viewing via a web browser.

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1 15. The interactive telecommunications billing mechanism as
2 recited in claim 14, wherein said each of said selected
3 transaction records documents a specific call event.

1 16. The interactive telecommunications billing mechanism as
2 recited in claim 15, wherein, upon execution of said
3 specific call event, said billing server generates a
4 corresponding specific transaction record.

1 17. The interactive telecommunications billing mechanism as
2 recited in claim 14, wherein said web browser is
3 compatible with web pages generated using hypertext
4 markup language (HTML).

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1 18. The interactive telecommunications billing mechanism as
2 recited in claim 16, wherein said web server is a
3 computer that transmits and receives data packets over
4 said data network to provide call events for said user.

1 19. The interactive telecommunications billing mechanism as
2 recited in claim 18, wherein said web server transmits
3 web pages over said data network to allow said user to
4 view said selected transaction records using said web
5 browser.

1 20. The interactive telecommunications billing mechanism as
2 recited in claim 19, wherein said web server employs
3 TCP/IP protocol to transmit and receive said data
4 packets.

SubC4 1 21. The interactive telecommunications billing mechanism as
2 recited in claim 20, wherein said query of said
3 transaction data base is an ODBC-compatible query.

1 22. The interactive telecommunications billing mechanism as
2 recited in claim 21, wherein said user command is
3 generated based upon query parameters entered by said
4 user on a web page hosted by said web browser.

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1 23. An apparatus for accessing selected telecommunications
2 records over the internet from a user computer that is
3 executing a web browser application, said apparatus
4 comprising:
5 a billing server, for maintaining telecommunications
6 records, and for providing the selected
7 telecommunications records in response to a user
8 request, said billing server comprising:
9 data base logic, for storing said
10 telecommunications records, wherein each of
11 said telecommunications records documents a
12 specific telecommunications event;
13 maintenance logic, for providing said data base
14 logic with a new telecommunications record
15 corresponding to a new telecommunications
16 event; and
17 query logic, for searching said telecommunications
18 records in accordance with parameters
19 prescribed by said user request, and for
20 retrieving the selected telecommunications
21 records; and

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22 a web server, coupled to said billing server, for
23 receiving said user request over the internet, and
24 for providing the selected telecommunications
25 records to the user computer over the internet.

1 24. The apparatus as recited in claim 23, wherein said web
2 server transmits a first web page over the internet to
3 allow the user computer to display the selected
4 telecommunications records.

1 25. The apparatus as recited in claim 24, wherein said
2 query logic is ODBC-compatible.

1 26. The apparatus as recited in claim 25, wherein said
2 parameters are entered in fields of a second web page
3 displayed on the user computer.

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1 27. A method for providing access to telecommunications
2 billing records in a billing computer over the
3 internet, the access being obtained via a remote
4 computer that is executing a thin web client
5 application, the method comprising:
6 a) maintaining the telecommunications billing records
7 in a data base, the telecommunications billing
8 records documenting individual telecommunication
9 events;
10 b) querying the data base in accordance with parameters
11 provided by a completed search parameter entry web
12 page; and
13 d) transmitting a search results web page to display
14 the telecommunications billing records on the
15 remote computer.

1 28. The method as recited in claim 27, wherein the
2 telecommunications billing records document charges
3 associated with toll calls.

1 29. The method as recited in claim 28, wherein TCP/IP
2 protocol is used to transmit the web pages over the
3 internet.

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- 1 30. A method for providing a user with detailed long
2 distance telephonic transaction information via a thin
3 web client, the method comprising:
4 a) providing a data server, coupled to local
5 telephone switches, for tracking long distance
6 telephone transactions for a plurality of
7 telephone numbers;
8 b) providing a web server, coupled to the data
9 server, for presenting to the user the detailed
10 long distance telephonic transaction information;
11 and
12 c) providing the user with a customizable event
13 monitor, coupled to the web server and to the data
14 server, the event monitor for alerting the user
15 when telephone transactions meet a specified
16 criteria.
- 1 31. The method as recited in claim 30 wherein the long
2 distance telephonic transaction information comprises
3 duration, date, and number called for each transaction.
- 1 32. The method as recited in claim 30 wherein the thin web
2 client comprises Internet Explorer or Netscape
3 Navigator.

1 33. The method as recited in claim 30 wherein the data
2 server and the web server are software programs.

1 34. The method as recited in claim 33 wherein the data
2 server and the web server both execute on the same
3 hardware device.

1 35. The method as recited in claim 30 wherein the event
2 monitor is a customizable software program for
3 automatically querying the data server for telephone
4 transactions that meet the specified criteria.

1 36. The method as recited in claim 30 wherein the specified
2 criteria comprises a total of long distance charges for
3 one or more of the plurality of telephone numbers,
4 within a specified time period.

1 37. The method as recited in claim 30 further comprising:
2 d) alerting the user according to customizable alert
3 options.

1 38. The method as recited in claim 37 wherein the
2 customizable alert options comprise email, fax or voice
3 notification.

SUB A11

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1 39. A long distance transaction event monitor, coupled to a
2 telephone network, for alerting a user when specified
3 alert criteria relating to telephony transactions have
4 been met, the event monitor comprising:
5 a web interface, for allowing a user to specify the
6 alert criteria;
7 query logic, coupled to said web interface, for causing
8 the specified alert criteria to query the
9 telephony transactions; and
10 an event monitor, coupled to said query logic, for
11 generating alert messages to the user when said
12 query logic determines that the specified alert
13 criteria is met by the telephony transactions.

1 40. The long distance transaction event monitor, as recited
2 in claim 39 wherein said web interface comprises a web
3 browser such as Internet Explorer or Netscape
4 Navigator.

1 41. The long distance transaction event monitor, as recited
2 in claim 39 wherein said query logic comprises:
3 an HTML configuration screen for allowing the user to
4 provided the specified alert criteria to the event
5 monitor; and

1 44. The long distance transaction event monitor, as recited
2 in claim 43 wherein said alert messages are configured
3 by the user via said web interface.

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